

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Takashi Horai et al.
Application No. : 10/693,314
Filed : October 24, 2003
For : METHOD AND APPARATUS FOR RECORDING DATA
IN OPTICAL RECORDING MEDIUM AND OPTICAL
RECORDING MEDIUM

Examiner : Latanya Bibbins
Art Unit : 2627
Docket No. : 890050.445
Date : October 22, 2007

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION FOR THE SUSPENSION OF RULES UNDER 37 CFR 1.183

Commissioner for Patents:

Pursuant to 37 CFR 1.183 TDK Corporation ("TDK") hereby petitions to suspend the rule requiring all joint inventors of the subject matter of rejected claims to sign a Declaration under 37 CFR 1.131 in the above-referenced application.

Procedural Background

On June 7, 2006, Applicants received a Non-Final Office Action rejecting all of the claims of the above-referenced application (the “Application”), based on *Shirota et al.*, U.S. Patent Publication No. 2003/0067857 (“*Shirota*”).

On December 7, 2006, Applicants filed a response to the received Office Action dated June 7, 2006. The response included a Declaration under 37 CFR 131 signed by Takashi Horai (“First Horai Declaration”), the first-named inventor of the Application, and a Declaration under 37 CFR 131 signed by Koichi Oishi (“Oishi Declaration”), a Japanese patent attorney representing TDK in Japan.

On March 5, 2007, Applicants received a Final Office Action that again rejected all of the claims of the Application based on *Shirota*, and refusing consideration of the First Horai Declaration and the Oishi Declaration. Examiner Bibbins asserted that she could not consider a Rule 131 Declaration unless it was signed by all inventors of the subject matter of the rejected claims, citing 37 CFR 1.131 and MPEP 715.04.

On June 5, 2007, Applicants filed an Amendment After Final under 37 CFR 1.116 along with a Declaration under 37 CFR 131 signed by three of the four co-inventors, Messrs. Horai, Fukuzawa, and Tsukamoto (“Joint Declaration”) and a supplemental Declaration under 37 CFR 131 signed by Mr. Horai (“Supplemental Declaration”), stating that the fourth co-inventor, Mr. Arioka, had resigned from TDK and could not be located for purposes of signing a declaration.

On July 9, 2007, Applicants received an Advisory Action stating that the Joint Declaration and the Supplemental Declaration filed on June 5, 2007 would not be considered after a Final Office Action as the above-identified Declarations raised new issues.

On August 6, 2007, Applicants filed a Request For Continued Examination requesting consideration of the Applicants’ submission of June 5, 2007, including the Joint Declaration and the Supplemental Declaration.

On August 21, 2007, Applicants received a Non-Final Office Action stating that the above-identified Declarations filed on June 5, 2007 were ineffective to overcome *Shirota* because the Declarations were not signed by all inventors of the subject matter of the rejected claims.

On August 28, 2007, Applicants' representative Mr. Carlson spoke with Supervisory Patent Examiner Young. Supervisory Patent Examiner Young suggested that Applicants file a petition under 37 CFR 1.183 requesting suspension of the rule requiring all joint inventors of the subject matter of rejected claims to sign a Declaration under 37 CFR 1.131.

Discussion

Even though MPEP 715.04 states that *all* the inventors of the subject matter of the rejected claims must sign the declaration, that section also states that "where it is shown that a joint inventor is deceased, refuses to sign, or is otherwise unavailable, the signatures of the remaining joint inventors are sufficient." That section of the MPEP also cites a case, *In Re Carlson*, 79 F.2d 900 (CCPA 1935) (hereinafter "*Carlson*"), that is particularly relevant to prosecution of the present application.

In *Carlson*, the Court of Customs and Patent Appeals addressed the question of whether all inventors of the subject matter of rejected claims must sign an affidavit to overcome a reference. *In Re Carlson*, 79 F.2d 900 (CCPA 1935). In that case, an affidavit signed by one of two joint inventors was filed to overcome a reference. In the affidavit, the signing inventor asserted that the non-signing inventor had resigned from the company that had employed both inventors at the time of invention, and that neither he nor the company knew the whereabouts of the non-signing inventor. The Examiner held the affidavit insufficient because it had not been signed by both inventors and that it did not provide a reason why the non-signing inventor had failed to sign. The Examiner's decision was overturned by the Board of Appeals, holding that the affidavit should have been considered and "that a suitable excuse had been given for the failure of

[the non-signing inventor] to sign.” The Court of Customs and Patent Appeals agreed with the Board of Appeals and considered the affidavit, stating that “[t]o rule otherwise would prevent one joint inventor, when the other is deceased or cannot be found, from having the benefit of this statutory provision of the rules of the Patent Office.” *Id.* at 901.

The facts in the present case are nearly identical to those in *Carlson*. Here, three of the four co-inventors have filed the Joint Declaration stating that Mr. Arioka, the fourth co-inventor, has resigned from TDK and that he could not be located for purposes of signing the Joint Declaration. In addition, inventor Horai has filed the Supplemental Declaration stating that he has located two of the three other co-inventors, but that Mr. Arioka has resigned from TDK and could not be located for purposes of signing the Joint Declaration. Applicants have included copies of the Joint Declaration and the Supplemental Declaration herewith. See, in particular, Joint Declaration, paragraphs 1-2, and Supplemental Declaration, paragraphs 3-4.

Under the standard of *Carlson*, such statements, made in a signed Declaration, provide a sufficient basis to support finding that Mr. Arioka is otherwise unavailable for signing a Declaration under 37 CFR 1.131. That is, the lack of Mr. Arioka’s signature on the Joint Declaration is not a fatal defect in view of the previously filed Joint Declaration and Supplemental Declaration. Accordingly, Applicants respectfully request that the Joint Declaration and Supplemental Declaration, originally filed on August 6, 2007, be considered by the Examiner of the present case.

Non-Signing Inventor’s Last Known Addresses

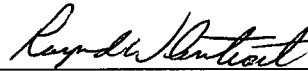
To the best of Applicants’ knowledge, the last known post office addresses for the non-signing inventor is:

Mr. Hiroyuki Arioka
c/o TDK Corporation
1-13-1 Nihonbashi
Chuo-ku, Tokyo, 103-8272
JAPAN

Conclusion

In order to prevent irreparable damage and preserve the rights of the co-inventors and assignee TDK, it is respectfully requested that this Petition be granted to suspend the rule requiring all inventors to sign a declaration, so that the Examiner of the present case may consider the previously filed Joint Declaration signed by three of the four co-inventors and the Supplemental Declaration signed by inventor Horai.

Respectfully submitted,
Seed Intellectual Property Law Group PLLC



Raymond W. Armentrout
Registration No. 45,866

BRD:asl

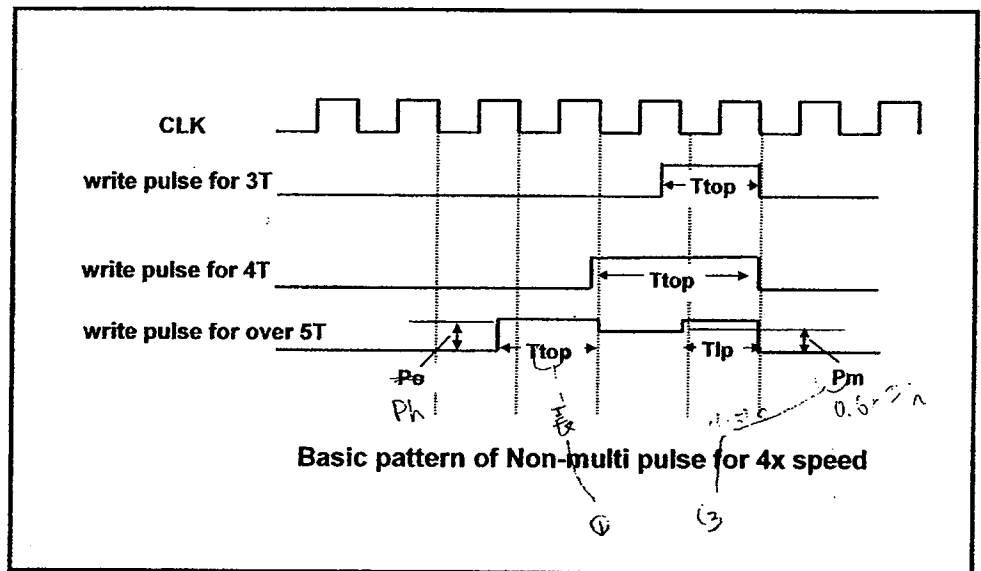
Enclosures:

Joint Declaration of Takashi Horai, Narutoshi Fukuzawa, and Syuji Tsukamoto
Exhibit A, with a Translation of Marked Text Portions of Exhibit A
Supplemental Declaration of Takashi Horai

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8)



○上はDVD-R4倍速記録で提案されているストラテジです。 #1

	type1	type2
3T _{top}	2.25	2.25
4T _{top}	2.60	2.50
nT _{top}	1.50	1.50
nT _{wt}	(n-1)	(n-1)
nT _{lp}	1.00	1.00

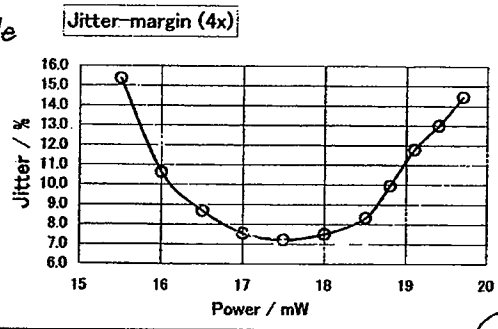
・Basic Write Strategyとして左記の2タイプが決めています。
メディアによって最適なパワー比があり、おそらく実機ではその比率のもとに最適パワーをコントロールするはず。
ですがTDK内での検討の結果、この2タイプの5T以上のT_{top}を長めにしてPh/P_m比を大きく(P_mを小さく)した方が、ジッターのマーヅンが広くなる結果が得られました。

#2

「実施例」 "Example"

	type2	実施例 ~ Example
3T _{top}	2.25	2.25
4T _{top}	2.50	2.50
nT _{top}	1.50	1.80
nT _{wt}	(n-1)	(n-1)
nT _{lp}	1.00	1.00

Ph/P_m 1.38 1.43



○ type2 実施例

#3

理由の推測ですが、
・5T以上のマークにはP_m(ミドルパワー)を設定して記録するので、Ph/P_m比とT_{top}(トップパルス)とT_{lp}(ラストパルス)でマーク長を調節できます。
たとえばTDKメディアはPh/P_m 1.38、18mW程度で特性ボトムになりますが、高パワーになったときにはPh/P_m 1.38ではなく、P_m比を上げたほうが実は特性が良い。
しかしPh/P_m比はドライブでは固定である。
それに対し、実施例はT_{top}長めにしてマーク長を形成しているので、P_mの依存性がより小さい。
よってジッターの劣化が小さい。

「効果」

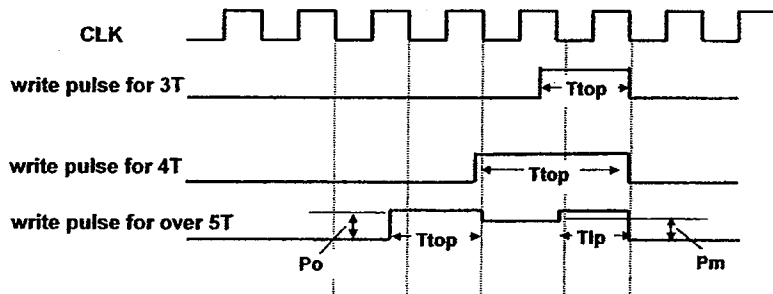
・ドライブのパワーバラツキ、メディアの感度バラツキに対しては広いマーヅンを持っていたほうが良いので、実施例ストラテジが有効。

「手段」

Basic Write Strategyよりも、5T以降のマークのT_{top}長めに、P_m小さめにする。
好ましくはnT_{top} 1.70T以上2.00T以下。(いま実施例が1つしかないです。近々検討の予定)。

○記録ストラテジに関する改善—DVD—R4倍速記録用メディア

#4



Basic pattern of Non-multi pulse for 4x speed

○上はDVD—R4倍速記録で提案されているストラテジです。

#1

	type1	type2
3Ttop	2.25	2.25
4Ttop	2.60	2.50
nTtop	1.50	1.50
nTwt	(n-1)	(n-1)
nTlp	1.00	1.00

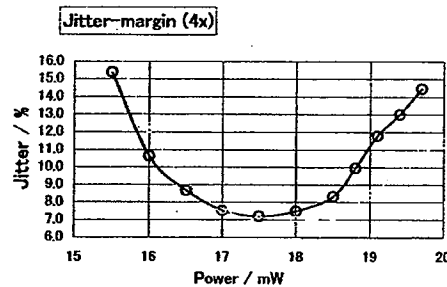
・Basic Write Strategyとして左記の2タイプが決められています。
メディアによって最適なパワー比があり、おそらく実機ではその比率のもとに
最適パワーをコントロールするはずですが、
ですがTDK内での検討の結果、この2タイプの5T以上のTtopを長めにして
Ph/Pm比を大きく(Pmを小さく)した方が、ジッターのマージンが広がる結果が得られました。

#2

「実施例」 Example 1 Example 2 Example 3

	type2	実施例1	実施例2	実施例3
3Ttop	2.25	2.25	2.25	2.25
4Ttop	2.50	2.50	2.50	2.50
nTtop	1.50	1.80	1.90	1.70
nTwt	(n-1)	(n-1)	(n-1)	(n-1)
nTlp	1.00	1.00	1.00	1.00

Ph/Pm 1.38 1.43 ? ?



○ type2

実施例1

Example 1

理由の推測ですが、
・5T以上のマークにはPm(ミドルパワー)を設定して記録するので、Ph/Pm比とTtop(トップパルス)とTlp(ラストパルス)でマーク長を調節できます。
たとえばTDKメディアはPh/Pm 1.38、18mW程度で特性ボトムになりますが、
高パワーになったときにはPh/Pm 1.38ではなく、Pm比を上げたほうが実は特性が良い。
しかしPh/Pm比はドライブでは固定である。
それに対し、実施例はTtop長めにしてマーク長を形成しているので、Pmの依存性がより小さい。
よってジッターの劣化が小さい。

#3

「効果」

・ドライブのパワーバラツキ、メディアの感度バラツキに対しては広いマージンを持っていたほうが良いので、実施例ストラテジが有効。

「手段」

Basic Write Strategyよりも、5T以降のマークのTtop長めに、Pm小さめにする。
好ましくはnTtop 1.70T以上2.00T以下。(いま実施例が1つしかないです。近々検討の予定)。

「実施例2」

・上記 nTtop を1.9Tとし、Ph/Pmを1.45として記録した。
(結果はまだありません)

#5

Exhibit A, page 2

CONFIDENTIAL

TRANSLATION OF MARKED TEXT PORTIONS OF
EXHIBIT A FROM HORAI DECLARATION

Note: The phrases provided between square brackets (“[“and”]”) are supplied by the interpreter, while the other form of brackets and phrases therebetween are found in the original Japanese texts.

TEXT #1

“Depicted above is a strategy proposed for 4X DVD-R recordings.”

TEXT #2

“Two types of strategies, shown left, have been adopted as Basic Write Strategy. Since the optimum power ratio depends on the media, an optimum power in actual devices would likely be controlled under such ratio.

However, the research within TDK has revealed that grater margins for jitter is obtained in these two types by using longer Ttop and larger Ph/Pm ratio (*i.e.*, smaller Pm) for 5T or above.”

TEXT #3

“The possible mechanism is as follows:

In recordings for marks of 5T or above, Pm (middle power) is adopted. Therefore, the mark length can be adjusted by Ph/Pm ratio, Ttop (top pulse) and Tlp (last pulse). For example, TDK’s media gives a bottom [jitter] characteristic at around $Ph/Pm = 1.38$ and 18mW. In reality, the media shows a better performance for a higher power if [Ph]/Pm ratio is increased, instead of $Ph/Pm = 1.38$.

However, the [conventional] drive has a fixed Ph/Pm ratio.

Contrary [to the conventional drive], the [present] example shows smaller dependency on Pm because the mark length is formed with extended Ttop. As a result, reduction of deterioration in the jitter is achieved.

‘Advantages’

Wide margins are favorable in light of fluctuations in power of drives and in sensitivity of media, thus, the strategy in the example is advantageous.

‘Means’

For marks of 5T or above, Ttop is set longer and Pm is set smaller than those for Basic Write Strategy. Preferably, nTtop is set between more than or equal to 1.70 T and less than or equal to 2.00 T. (We have obtained only one example at this stage. Now we are planning to research in the near future.)“

TEXT #4

“Improvement Regarding Write Strategy --- 4X DVD-R Recording Media”

TEXT #5

“ 'Example 2' ”

The recording has been conducted with the nTtop of 1.9 T and the Ph/Pm of 1.45. (The result has never been obtained.)”

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PATENT

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MEDIUM

Examiner : Latanya Bibbins
Art Unit : 2627
Docket No. : 890050.445
Date : May 30, 2007

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF TAKASHI HORAI, NARUTOSHI FUKUZAWA,
AND SYUJI TSUKAMOTO UNDER 37 CFR 1.131

Sir:

We, Takashi Horai, Narutoshi Fukuzawa, and Syuji Tsukamoto, hereby declare as follows:

1. We are three of the four co-inventors of the above-listed patent application which has been filed in the U.S. Patent and Trademark Office.
2. We declare that the fourth co-inventor of the above-listed patent application, Mr. Hiroyuki Arioka, has resigned from TDK Corporation and could not be located for purposes of signing this Declaration.
3. We had conceived of, and reduced the present invention to practice prior to September 10, 2002, the filing date of U.S. Patent Application No. 2003/0067857 to Shirota et al. (hereafter "Shirota et al.") In particular, prior to September 10, 2002, we, the named inventors, had reduced to practice the invention of claims 1-12 of the above-referenced application as originally filed.

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4. As evidence of our having conceived and reduced to practice the invention prior to the date of September 10, 2002, attached herewith as Exhibit A is a copy of two pages evidencing reduction to practice of the invention. These documents provide evidence of actually carrying out the practice of the invention and the operation of working examples. (The boxes marked with the numbers #1, #2, #3, #4 and #5 have been added by the U.S. patent attorney for ease of reference in the translation.)

5. Exhibit A is a document prepared by the inventors evidencing the practicing of the invention. This document, in Japanese, shows on pages 1 and 2 actual examples being carried out practicing the claimed invention. In particular, as can be seen looking at the example on page 1, the power nT_{top} is 1.8 and the ratio of the power Ph/Pm has been set in Example 1 to be 1.43. (In the application filed in the U.S., nT_{top} is referred to as t_{top2} and the recording power was represented as Pw in place of Ph , so this corresponds to a ratio of Pw/Pm of 1.43 of the claimed invention.) See column 2 of the chart showing the example on page 1 of Exhibit A. Turning now to page 2 of Exhibit A, further results of working examples of the invention are shown. On page 2, a chart is provided that has working examples each labeled as Example 1, Example 2 and Example 3 by the U.S. patent attorney. In addition, in each of the examples, the recording level nT_{top} has been set to 1.8, 1.9, and 1.7, respectively, so that in each example this power is equal to or greater than 1.7 T, which is a feature of the claims.

6. As can be seen from the second page of Exhibit A, the conditions for recording in the reduction to practice of the invention presented as examples 1, 2 and 3 were provided as the working examples having the recording conditions 1, 2 and 3 in the application as filed.

7. Page 2 of Exhibit A also contains further evidence of the invention being reduced to practice in the note Mr. Horai added at the bottom, enclosed in Box #5. This note states that the recording was conducted with an nT_{top} of 1.9 and the Ph/Pm of 1.45. This is further evidence of practicing the invention. Thus, Exhibit A provides the evidence of the actual working examples for the reduction to practice of the present application as filed in the U.S. Patent and Trademark Office.

8. We further declare that page 1 of the attached Exhibit A was completed prior to July 12, 2002. It was provided on July 12, 2002 by TDK to the law firm of Oishi and

Application No. 10/693,314

Partners to prepare the present application. Page 2 of Exhibit A was personally prepared by Mr. Horai on July 16, 2002. This page 2 was prepared by Mr. Horai by adding the additional working examples on page 2 to the electronic document which had existed as page 1. For example, as can be seen, pages 1 and 2 are identical in many respects except for the additions Mr. Horai made on page 2 on July 16, 2002. Page 1 has one working example which shows an operational embodiment of the invention as now claimed. When page 2 was prepared, Mr. Horai added two additional examples of carrying out the present invention to further verify the parameters of operation as now claimed in the present application. Therefore, on page 2, Mr. Horai personally added the data of examples 2 and 3. In addition, Mr. Horai added the note at the bottom that in example 2 the recording was carried out with an nT_{top} of one of 1.9 T and a ph/pm of 1.45. Mr. Horai then noted that such a result had never been obtained before. This can be seen as the additional box on the lower part of page 2 of Exhibit A.

9. In conclusion, Exhibit A, pages 1 and 2, provides actual working examples of the inventors having reduced to practice the claimed invention and having provided these working examples to the patent attorneys in Japan who prepared the application for filing to cover the present invention which was subsequently filed in the U.S. Patent and Trademark Office.

10. While the documents of Exhibit A do not on the face thereof have a date, we have personally verified that date of Exhibit A, page 1 to be completed by July 12, 2002 and page 2 to have been prepared by Mr. Horai personally on July 16, 2002.

11. Further, we provided these documents to the patent attorney in Japan of Mr. Oishi's firm, who prepared the application on behalf of TDK on the date of July 12, 2002 and shortly after July 16, 2002, respectively. These were used to prepare a new application, bearing Japanese Application No. 2002-316216, which was subsequently filed in the United States in correspondence to the present application.

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information or belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United

Application No. 10/693,314

States Code, and that such willful false statements may jeopardize the validity of the captioned patent application or any patent issued therefrom.

May. 31, 2007
Date

Takashi Horai
Takashi Horai

May. 31, 2007
Date

Narutoshi Fukuzawa
Narutoshi Fukuzawa

May 31, 2007
Date

Syuji Tsukamoto
Syuji Tsukamoto

Attachment: Exhibit A

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Seattle, Washington 98104-7092
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PATENT

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Alexandria, VA 22313-1450

SUPPLEMENTAL DECLARATION OF TAKASHI HORAI
UNDER 37 CFR 1.131

Sir:

I, Takashi Horai, hereby declare as follows:

1. I am one of the co-inventors of the above-listed patent application which has been filed in the U.S. Patent and Trademark Office. I am also the first named inventor on this application.
2. I have reviewed my Declaration under 37 CFR 1.131, filed December 7, 2006, and verify that the statements and declarations made therein are correct. I hereby incorporate my Declaration under 37 CFR 1.131, filed December 7, 2006, herein by reference.
3. I have located two of the other three co-inventors of the above-listed patent application, Mr. Narutoshi Fukuzawa, and Mr. Syuji Tsukamoto. Messrs. Fukuzawa and Tsukamoto have joined me in signing a new Declaration under 37 CFR 1.131, which is filed herewith.
4. I could not locate Mr. Hiroyuki Arioka, who is the third of the other three co-inventors of the above-listed patent application. Mr. Arioka has resigned from TDK Corporation.

Application No. 10/693,314

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information or belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the captioned patent application or any patent issued therefrom.

May 31, 2007
Date

Takashi Horai
Takashi Horai

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